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| 10/747,657      | 12/30/2003  | Byoung Kee Kim       | 1315-050            | 1579             |

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EXAMINER

MAI, NGOCLAN THI

ART UNIT PAPER NUMBER

1742

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/747,657

Applicant(s)

KIM ET AL.

Examiner

Ngoclan T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,10-12 and 16 is/are rejected.
- 7) ☒ Claim(s) 9,13-15 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/27/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Newly submitted claims 18-19 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the claims are related as product made whereas the original claims 1, 3, 4, 7, and 9 are related to process of making. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case product as claimed can be made by ball milling a mixture of carbide cermet precursor powders and a carbon source and annealing the milled powder to form carbide cermet.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 18-19 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

2. Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation "TiC-transition metal-based complex oxide powder" in lines 1-2 is incorrect. It should be recited as "TiC-transition metal-based complex powder".

Claim 12 is rejected for being depended on rejected base claim.

***Response to Arguments***

3. Applicant's arguments filed 6/27/05 have been fully considered but they are not persuasive. Applicant essentially argues that the amended claim 1 differs from Kim et al. and Hardy et al. by requiring a Ti-containing water soluble salts, or a  $\text{TiO}(\text{OH})_2$  slurry, or ultrafine titanium dioxide powder and a

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transition metal-containing water-soluble in water to be dissolved or dispersed with each other and that there is a difference in the composition between Kim and the method of claim 1 in that Kim powder having W as a major component. The examiner must disagree with the applicant in that Kim discloses employing water soluble salt of Ti and Co, i.e., Ti-trichloride ( $\text{TiCl}_3$ ) and Co-nitrate ( $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ ) and dissolving them in water, see col. 3, lines 42-49. Note that in claim 1 any of the Ti-containing compound can be used. As regards to W as the major component taught by Kim, there is no recitation in the claim to distinguish the claimed invention or exclude W from present in the starting material. As for the argument that (W,Ti)C composite carbide is formed by first forming WC and Co and then Ti-based oxide is reduced by carbon and hydrogen or more to form TiC, Applicant's argument of instant remarks is noted. But applicants fail to substantiate their position by factual evidence that the reaction as remarked is taking place in the prior art and not in the claimed invention. Also note that the arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). With regarding to Kim not discloses or suggest the use of nano-sized carbon, the examiner must disagree in that Kim teaches the ball-milling of the oxide powder mixture with carbon to penetrated carbon into the pores of the oxide powder. This indicates that carbon particle must be very small in order to penetrate the pores of the oxide powder. Furthermore the use of carbon black by the patent suggests that nano-size carbon is used because it well known that carbon black has nano particle size, see U.S. Patent No. 6,103,393, col. 39, lines 10-11 which is cited to show this fact but not used in the rejection.

4. Claims 1, 3, 7, 10 and 16 are still rejected under 35 U.S.C. 102(b) as being anticipated by Kim and claim 4 under 35 U.S.C. 103(a) as being unpatentable over Kim. The rejection was made in the previous office action and is incorporated herein by reference.

5. Claims 9, 13-15 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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***Conclusion***


6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742

n.m.